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ABSTRACT

This technical paper describes the latest consumer expenditure survey for the period of 1972 to 1974. The survey is a comprehensive source of detailed information on the expenditure patterns and savings behavior of American consumers in relation to their income and other characteristics. The first part of the paper describes the most recent survey, its sample design, questionnaire content, and general limitations. Section 2 reviews the major uses of data provided by the survey. The discussion focuses on the survey's usefulness for deriving measures of poverty, indicating both strengths and weaknesses. The basic conclusion is that, while the data collected in the survey are ideal in most respects for construction of alternative poverty measures, for both needs and income the sample size is not large enough to support meaningful analysis of breakdowns cross-classified by income, family size, geographic location, and Standard Metropolitan Statistical Areas of residence. Section 3 discusses the preliminary results of the survey in terms of changes in basic spending patterns for food that have occurred since the last survey. (Author/AM)

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# THE MEASURE OF POVERTY

Technical Paper VIII
The 1972-73 Consumer Expenditure Survey

BEST COPY AVAILABLE

By: Jill King
Mathematica, Inc.

UD016922

U.S. Department of Health, Education, and Welfare

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I am pleased to forward Technical Paper VIII, "The 1972-73 Consumer Expenditure Survey". It contains supporting data for the report entitled The Measure of Poverty which was prepared in compliance with section 823 of the Education Amendments of 1974. This paper was produced with the assistance of Mathematica, Inc., based on an outline and published government material provided by the Poverty Studies Task Force. It does not present the views of the Task Force as a whole or of individual members. Rather, it provides a general description of the Consumer Expenditure Survey with special attention to the applicability and reliability of the survey data for revising or refining the current poverty measure.

Bette Mahoney, Chairman
Poverty Studies Task Force

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## PREFACE

> Section 823 of the Education Amendments of 1974 (PL 93-380) requires a thorough study of the manner in which the relative measure of poverty for use in the financial assistance program, authorized by Title I of the Elementary and Secondary Education Act of 1965, may be more accurately and currently developed.

That financial assistance program is administered by the Commissioner of Education, through the Office of Education, Department of Health, Education, and Welfare. An important feature is the use of a formula prescribed by Section 103 of the Elementary and Secondary Education Act for the annual distribution of Federal funds to school districts. A significant factor in the formula is the number of school-age children 5 to 17 in poor families within each school district. The measure of poverty which is used, and which is the subject of the study mandated by Section 823, is the Federal government's official statistical definition of poverty (also known as the Orshansky, OMB, Census Bureau, or Social Security poverty lines).

Other work related to poverty measurement has been called for in recent legislative acts. In the Comprehensive Employment and Training Act, the Secretary of Labor is directed to develop and maintain comprehensive household budget data at different levels of living, including a "level of adequacy." Any such review of the level of adequacy must necessarily be closely related to measures of poverty. The Housing and Community Development Act of 1974 gives the Secretary of HUD authority to adjust the poverty measure to reflect local variations in the cost of living. The Conference Report accompanying it directs the Secretary to develop or obtain data with respect to the "extent of poverty" by metropolitan areas and to submit such data to the Congress as part of a March 31, 1977, report.

Because of the broad scope of the subject matter, coverage of the study of the measure of poverty mandated by section 823 of the Education Amendments of 1974 was extended to include implications of the study findings for the poverty-related programs of all affected Federal departments and agencies. The Title I program of the Elementary and Secondary Education Act was given the most detailed treatment, to meet the legislatively-mandated specifications for the study as well as to serve as a primary example of application of the concepts of poverty measurement to Federal programs. The findings of the study are published in a report entitled, "The Measure of Poverty." An important objective of the study was full discussion and documentation of the major elements of currently applied and potentially usable poverty measures. Material containing essential supporting documentation for the study was assembled as technical papers. These have been written to stand alone as complete technical treatments of specific subjects.

The study was performed under the direct guidance of a Poverty Studies Task Force of the Subcommittee on the Education of the Disadvantaged and Minorities, Federal Inter-Agency Committee on Education. Technical papers were prepared at the request of, under the direction of, and subject to review by the Task Force members. Some papers are primarily the work of one or two persons; these are attributed to their authors. Others result from the collective input of Task Force members or advisors and no specific attribution is given except to the Task Force, as a whole.

The following listings show members of the Poverty Studies Task Force by appropriate Federal departments and agencies, and the titles and authors of the technical papers.

This report contains Technical Paper VIII, The 1972-73 Consumer Expenditure Survey. It was produced with the assistance of Jill King, Mathematica, Inc.

To obtain copies of the report, "The Measure of Poverty," or any of the technical papers, please write to:

Office of the Assistant Secretary for Planning and Evaluation
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Federal Interagency Committee on Education
Subcommittee on Education for the Disadvantaged and Minorities

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TECHNICAL PAPERS

| | | |
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| I. | Documentation of Background Information and Rationale for Current Poverty Matrix | Mollie Orshansky<br>Social Security Administration |
| II. | Administrative and Legislative Usages of the Terms "Poverty," "Low Income," and Other Related Items | Poverty Studies Task Force<br>with assistance from Ellen Kraus |
| III. | A Review of the Definition and Measurement of Poverty | Urban Systems Research and Engineering, Inc. |
| IV. | Bureau of Labor Statistics Family Budgets Program | Mark Sherwood<br>Bureau of Labor Statistics |
| V. | The Consumer Price Index | Jill King<br>Mathematica, Inc. |
| VI. | Wealth and the Accounting Period in the Measurement of Means | Nelson McClung and Eugene Steuerle<br>Department of the Treasury |
| VII. | In-kind Income and the Measurement of Poverty | Janice Peskin<br>Health, Education, and Welfare |
| VIII. | The 1972-73 Consumer Expenditure Survey | Jill King<br>Mathematica, Inc. |
| IX. | Inventory of Federal Data Bases Related to the Measurement of Poverty<br>(a) Non-Census Data Bases<br>(b) Census Data Bases | Connie Citro, Mathematica, Inc.<br>Bureau of the Census |
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| XVI. | Implications of Alternative Measures of Poverty on Title I of the Elementary and Secondary Education Act | Abdul Khan and Herman Miller<br>Health, Education, and Welfare |
| XVII. | The Sensitivity of the Incidence of Poverty to Different Measures of Income: School-aged Children and Families | Survey Research Center<br>University of Michigan |
| XVIII. | Characteristics of Low-Income Populations Under Alternative Poverty Definitions | Lawrence Brown<br>Health, Education, and Welfare |

TECHNICAL PAPER VIII

THE 1972-73 CONSUMER EXPENDITURE SURVEY

The consumer expenditure surveys conducted periodically by the Bureau of Labor Statistics provide the only comprehensive source of detailed information on the expenditure patterns and savings behavior of American consumers in relation to their income and other characteristics. Reference has been made either directly or indirectly to these data throughout this report: the Consumer Price Index, the BLS family budgets, determination of relative standards of need, equivalence scales, development of a price index specific to the poor, examination of the purchasing habits of the poor. This technical paper describes the latest survey, conducted in the period 1972 to 1974. Although the description is general, special attention is directed to the applicability and reliability of the survey data for revising or refining the current poverty measure.

This Paper has three parts. Section I describes the most recent survey, its sample design, questionnaire content, and general limitations. Much of this discussion draws heavily on material in an article published in the Monthly Labor Review 1/ and a speech by Bureau of Labor Statistics (BLS) Commissioner Shishkin before the American Marketing Association, 2/ supplemented by conversations with BLS staff. Section II briefly reviews the major uses of data provided by this survey. However, the discussion focuses on its usefulness for deriving measures of poverty, indicating strengths and weaknesses for this purpose. The basic conclusion is that, while the data collected in the survey are ideal in most respects for construction of alternative poverty measures, for both needs and income the sample size is not large enough to support meaningful analysis of breakdowns cross-classified by income, family size, geographic location, and Standard Metropolitan Statistical Areas (SMSA) residence. Finally, in Section III, some preliminary results from the 1972-73 survey are discussed in the context of changes in basic spending patterns for food that have occurred since the last survey.

I. DESCRIPTION OF THE 1972-73 SURVEY

The 1972-73 Consumer Expenditure Survey (CEX) is the latest in a series of periodic surveys of consumer expenditures, incomes, and changes in assets and liabilities begun in 1888-91. 3/ It continues the basic purpose and content of the earlier surveys, and differs only with respect to certain collection techniques designed to improve the quality of the data. Although this description concentrates on the latest survey, major departures from past practices are noted at several points in the discussion.

The Consumer Expenditure Survey provides detailed information on the expenditure patterns and savings behavior for a nationally representative sample of the noninstitutional population of the entire United States. Unlike previous surveys, it was conducted by the Bureau of the Census for the Bureau of Labor Statistics (BLS). Interviewing extended over a 2-1/2 year

period, from 1972 to 1974, to minimize the impact of unusual economic conditions which might coincide with the survey and affect the results. The survey actually consisted of two separate surveys, each with its own questionnaire and sample. These are referred to as the Diary Survey and the Quarterly Survey. The rationale behind this radical departure from previous methodology was that the recall of expenditures varied with the cost and importance of the item. Therefore, information on larger and more easily recalled expenditures was collected by periodic recall on the Quarterly Survey, and expenditures on smaller, relatively inexpensive and more frequently purchased items collected daily recordkeeping in the Diary Survey. The Quarterly Survey, thus, obtained detailed information on about 60 to 70 percent of average family expenditures and aggregate information for about another 20 to 25 percente. Detailed expenditures for those aggregates and for the remaining items, a total of 30 to 40 percent of total expenditures, were obtained in the Diary Survey. The content of each of these surveys is described in some detail after having briefly reviewed their common sample design. At the conclusion of this section some general problems with the CEX are raised.

Sample Design

The sample designs for the Quarterly Survey and the Diary Survey were virtually identical, although a different sample of addresses was selected for each component survey. The samples are representative of the civilian noninstitutional population of the United States, covering all geographic areas and including urban and rural, farm and nonfarm households.

The sampling procedure for each survey involved two stages. First, 216 primary sampling units (PSUs) 4/ were selected from the approximately 3,000 which exhaust the area of the country; 54 were included on the basis of size and the remaining 162 were selected at random. Second, the addresses of the households in those PSU's answering an extended questionnaire on the 1970 Census, a random 20 percent of the population, were stratified on the basis of tenure (owner or renter), size of the primary family income, and size of the primary family. 5/ The sample was then selected at random from these strata. The sampling rate for the entire population was about 1 in 3,000. To split the sample addresses into two representative subsamples, one for each year of the survey, one-half of the addresses selected in each of the 30 largest PSU's (those representing the major metropolitan areas) were included in each year, and the remaining 186 PSU's were paired into two groups, one for each year.

Following this procedure, a sample of 23,000 addresses was selected for the Quarterly Survey. Preliminary analysis indicates a response rate of 88 percent of eligible sample units in 1972 and 90 percent in 1973, yielding 9,914 and 10,158 interviews in each year, respectively. For the Diary Survey a sample of 27,000 addresses was selected. The response rate was somewhat lower in the first year, only 80 percent, resulting in 20,392 completed one-week diaries, and rose to 90 percent in the second year, yielding 23,355 one-week diaries.

## The Diary Survey

The first year of the Diary Survey began in the last week of June 1972 and continued through the third week of June 1973; the second year of the Diary Survey extended from the last week of June 1973 through the third week of June 1974. Interviewing was spread evenly throughout the year to capture any seasonal variations in expenditures, except for doubling of the sample during the December holiday season in a concentrated effort to obtain more reliable information for increased spending at that time.

Each family was requested to keep a detailed diary of purchases over two consecutive one-week periods. Although the primary purpose of the Diary Survey was to supplement the Quarterly Survey with detailed expenditures for small, frequently purchased items, respondents were requested to record all purchases to prevent any confusion about what items should be included. The major expenditure components for which the Diary Survey was designed were food, beverages, household supplies, personal care products and services, and nonprescription drugs.

A specific diary form was left with each family for the purpose of recording expenditures. It was divided by day and by broad classification of goods and services. Within the broad categories, detailed subcategories were distinguished. For example, food and beverages was further subdivided into dairy and bakery; meat, fish, and poultry; fruits and vegetables; and so on. Moreover, respondents were directed to specify such precise details as the cut of meat, the kind of milk (whole, skim, condensed, chocolate), the type of flour (white, whole-wheat, all-purpose, cake), and net weight or volume; whether milk was delivered; and whether the item was fresh, frozen, canned, dried, or packaged. Meals Away From Home comprised a separate broad category with its own specific requirements for detail, such as where purchased (restaurant, cafeteria, vending machine, etc.). Finally, All Other Purchases were divided into various meaningful subcategories, such as cleaning and laundry supplies; household help, babysitters, etc.; personal care, drugs, and medical supplies, for which specific directions were provided, such as whether drugs were prescribed. A sample page from the diary questionnaire is included as Figure 1 to illustrate the instructions and the degree of detail of the items recorded.

The coding of these recorded items preserved most of the level of detail, although some items were combined into broader classes. For example, within beef entries, ground beef, chuck roast, rib roast, chuck steak, rib steak, sirloin steak, and T-bone steak were each distinguished separately; but the other steak category included such diverse cuts as filet mignon, salisbury steak, cube steak, and delmonico steak. Similarly, household cleaning equipment included 23 items, such as bottle brush, bowl cleaner, dish mop, vacuum bag, and dust pan. In all, more than 1,750 different codes were developed to classify the expenditures for analysis, of which over 450 are just for the food at home purchases. Gifts to persons outside the consumer unit were identified, as were the age and sex of the unit member for whom each clothing purchase was made.

▶ *Please provide the following information when recording these items:*

**FOOD AND BEVERAGES**

**Milk** – Specify if whole, skim, half and half, chocolate, condensed, etc.
**Cheese** – Specify if solid cheese, cheese spread, or cheese dip.
**Bread** – Specify if white, whole-wheat, rye, pumpernickel, etc.
**Beef** – Specify the cut and describe, such as round steak, sirloin steak, ground beef, prime ribs, etc.
**Pork** – Specify the cut and describe, such as loin roast, fresh whole ham, spareribs, bacon, etc.
**Chicken** – Specify if fryer, broiler, parts (sold separately) or other chicken.
**Soft Drinks** – Specify if cola or other type. If not cola, specify if carbonated or noncarbonated.
**Coffee** – Specify if instant or ground; if ground, indicate if in bags or cans.
**Tea** – Specify if instant, tea bags, or loose.
**Sugar** – Specify if white, brown, granulated, confectioners', or powdered.
**Cereal** – Specify type (corn flakes) or brand name.
**Flour** – Specify if white, all purpose, cake, whole-wheat or other flour.

**DETERGENTS** – Specify if for laundry, household cleaning, or dishwasher and if liquid or powder.
**DOCTOR BILLS** – Specify type of doctor visited, such as general practitioner, internist, etc.
**DENTIST BILLS** – Specify the type of work, such as extractions, teeth straightening, etc.
**TOYS** – Specify, such as games, electric train set, doll, etc.

▶ *EXAMPLES OF SOME FOOD ITEMS*

**FOOD AND BEVERAGES**

| OFFICE USE ONLY | | Item (Describe the items purchased, such as whole milk, T-bone steak, dried apricots, all purpose flour, oatmeal, etc.) | Number of cans, bottles, packages, etc. | Net weight or volume per unit (Examples: 8 oz., 1 qt., 5 lbs., etc.) | Is this item – (Mark only one) Fresh | Frozen | Canned | Packaged | Total cost (Exclude sales tax) Dollars | Cents |
|---|---|---|---|---|---|---|---|---|---|---|
| – 50 013 | | Dairy and Bakery Products (Exclude dried milk in dish/mixes) | | | | | | | | |
| A | | Milk - 2% | 1 | ½ gal. | A | | | | 1 | 53 |
| B | | Cottage cheese | 1 | 2 lbs. | A | | | | | 65 |
| C | | Eggs | 1 doz. | | X | | | | | 59 |
| | | | | | | | | | | |
| – 50 | | Meat, Fish, and Poultry (Exclude this cut of meat) | | | | | | | | |
| L | | Beef pot roast | 1 | 2.43 lbs | X | | | | 2 | 53 |
| M | | Chicken parts | 1 | 1.39 lbs | | X | | | | 39 |
| N | | Pork chops | 1 | .56 lbs | X | | | | 1 | 19 |
| | | | | | | | | | | |
| – 50 021 | | Fruits and Vegetables (Exclude if dried) | | | | | | | | |
| A | | Spinach | 2 | 10 oz. | | X | | | 1 | 59 |
| B | | Strawberries | 1 | 1 pint | X | | | | | 29 |
| | | | | | | | | | | |

**MEALS AND SNACKS PURCHASED AT A RESTAURANT, CARRY-OUT, ETC.**

| OFFICE USE ONLY | | Item (Include breakfasts, dinners, school lunches, snacks, and drinks purchased at a restaurant, bar, vending machines, etc.) | Was this purchased at a – (Mark one) Restaurant | Cafeteria | Drive-in or carry-out | Vending machine | Other | Total cost (Include tips) Dollars | Cents |
|---|---|---|---|---|---|---|---|---|---|
| – 30 049 | | | | | | | | | |
| A | | Lunch | X | | | | | 1 | 37 |
| B | | Coffee | | | | X | | | 15 |
| C | | 2 school lunches | | X | | | | | 90 |

▶ *EXAMPLES OF SOME OTHER DAILY ENTRIES*

**ALL OTHER PURCHASES AND EXPENSES**

| OFFICE USE ONLY | | Item (Describe the item purchased) | Total cost (Exclude sales tax) Dollars | Cents | OFFICE USE ONLY | | Item (Describe the item purchased) | Total cost (Exclude sales tax) Dollars | Cents |
|---|---|---|---|---|---|---|---|---|---|
| – 20 057 | | Cleaning, Laundry Supplies, and Paper Products | | | – 20 081 | | Housewares, Furnishings, Appliances, and Garden Supplies (mirrors, light bulbs, tools, etc.) | | |
| A | | Wax paper | 1 | 29 | A | | Wastebasket | 1 | 09 |
| B | | Liquid laundry detergent | | 49 | B | | Light bulbs | | 89 |
| C | | | | | C | | | | |
| – 20 063 | | Personal Care, Drugs, and Medical Supplies (Exclude if prescribed by a doctor) | | | – 20 099 | | Gas, Oil, Taxis, Parking Fees, and Other Vehicle Expenses; Public Transportation Expenses | | |
| A | | Razors | 1 | 79 | A | | Laundry | 1 | 45 |
| B | | Allergy shot | 15 | 00 | B | | Gum | | 49 |
| C | | | | | C | | | | |

SOURCE: Michael D. Carlson, "The 1972-73 Consumer Expenditure Survey," Monthly Labor Review (December 1974), p. 22.

Figure 1. A Sample Page from the Diary Survey

The interviewer also collected from the diary respondents certain socio-economic characteristics of the consumer unit. Prior to leaving the first weekly diary with the respondent, the interviewer obtained information on family size, housing tenure (owner or renter), and the age, race, sex, education (for head and spouse only), and marital status of each unit member. At the end of the second week, the interviewer obtained information on the work experience, occupation, and industry for each unit member, and annual income from detailed sources for the unit as a whole. The time period referred to the 12 months preceding the interview, so that the year covered varied with the date of the interview. Income is the usual Census inclusive measure of regular cash income, and the eight detailed sources correspond to those distinguished in the Current Population Survey, March income supplement; wages or salary; net business income; net farm income; Social Security or railroad retirement; estates, trusts, dividends, interest, and net rental income; welfare or other public assistance; unemployment compensation, workmen's compensation, government employee pensions, veteran's payments; private pensions, alimony and child support, and regular contributions. In addition, the second year diary questionnaire included a set of questions which permitted the calculation of the bonus value of food stamps 6/ for participants in that program.

The Quarterly Survey

Each Quarterly Survey covered a 15-month period, beginning in January of 1972 or 1973. Households in each yearly sample were interviewed at the end of each quarter, for a total of five interviews, and one-third of the survey units were interviewed each month throughout the month. Following the rationale of the overall design of the Consumer Expenditure Survey, the expenditures collected in the Quarterly Survey were further spread out by likely period of recall. "Frequently purchased or relatively inexpensive items such as clothing and utilities were collected each quarter. A six-month recall period was used for relatively expensive items such as furniture and small kitchen appliances. A 12-month recall period was used for major appliances, real estate, motor vehicles, and other items which are expensive or infrequently purchased." 7/ In total, all expenses except those for which the diary questionnaire was designed were recorded. 8/ These included detailed information on out-of-town trips and vacations, taxes, home repairs, all types of insurance policies, clothing, professional services of doctors, dentists, etc., and charitable contributions. In addition, global estimates for expenditures on food and beverages were obtained in quarters two through five.

As with the Diary Survey, the coding of the responses was extremely detailed. For example, in the clothing section items of apparel were narrowly defined, distinguishing dress shirts, sports shirts, work shirts, blouses or tops, and other shirts, in addition to coding the age and sex of the person for whom the clothing was purchased. Gifts to persons outside the consumer unit were explicitly identified. "Data collected in the house furnishings and home appliance sections included codes for new or used purchases." 9/ Financing arrangements and credit charges were recorded.

Savings behavior over the calendar year was derived by calculating the net change in assets and liabilities on the basis of reported balances for January 1 and December 31 and intra-year financial transactions. Reporting was by detailed asset and liability categories, including savings accounts, checking accounts, real estate, securities, debts to finance companies, debts to stores, and medical debts.

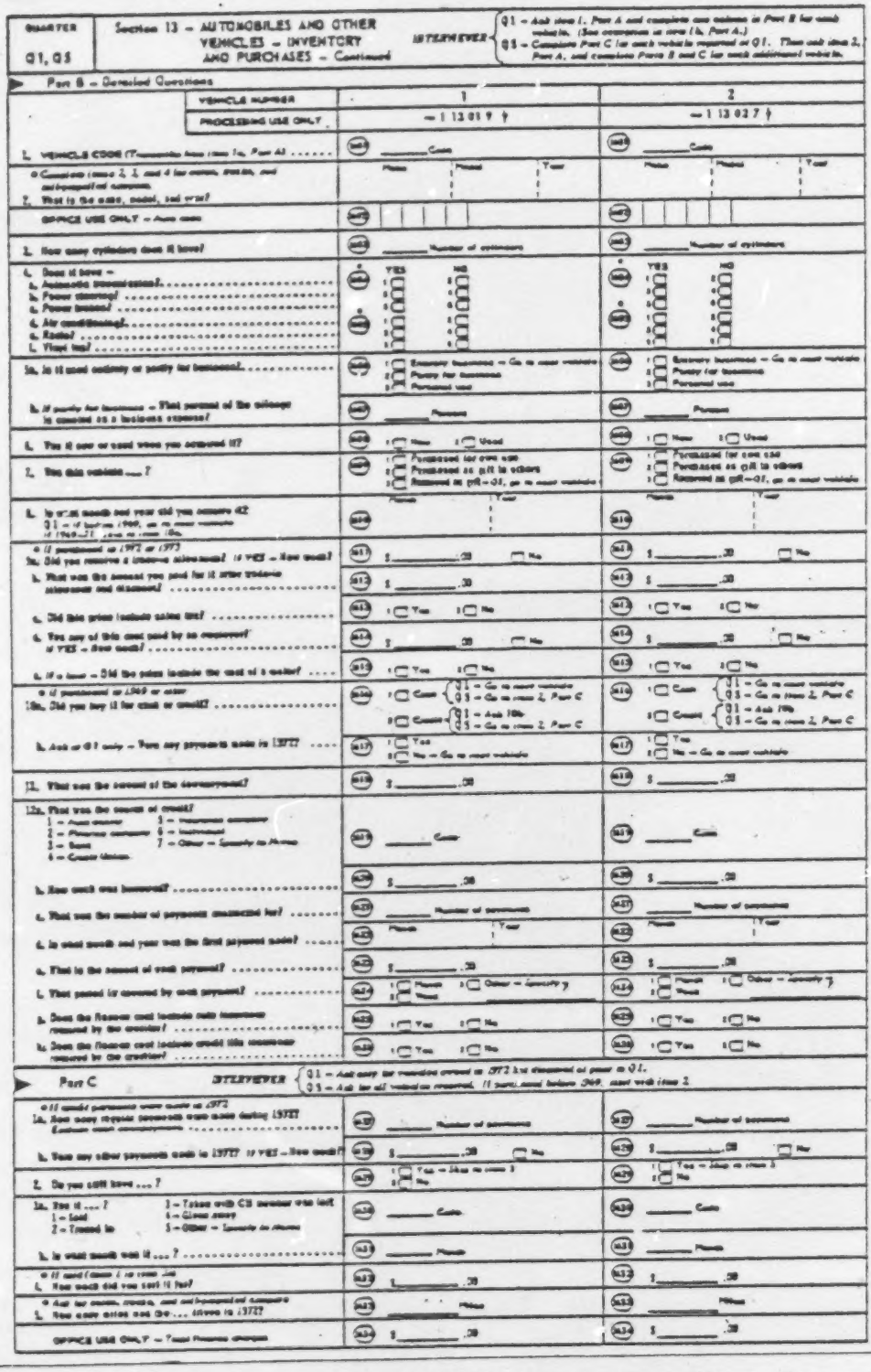
At the first interview, detailed information was collected on the socioeconomic characteristics of the consumer unit at the second quarter's interview — age, race, sex, education (for head and spouse), and marital status of each member, and an inventory of major durable goods such as automobiles, stove, refrigerator, freezer, dishwasher, and sewing machine. Characteristics of those durable goods were also recorded; for example, whether a car had air conditioning, whether it had standard or automatic transmission, and so on. An inventory of minor appliances, such as blender, electric toothbrush, and toaster, was also obtained.

At the last interview, in addition to the asset and liability data mentioned previously, the interviewer obtained information on the work experience, occupation, and industry pertaining to calendar year 1972 or 1973 for each person in the consumer unit 14 years old or over, and annual income for 1972 or 1973 by detailed source for each person. The sample was spread equally over three months with one-third interviewed in January, one-third in February, and one-third in March. The March interviews coincided with the filing of annual personal income tax returns and may have increased the accuracy of this information.

The sources of income were even more detailed than those specified on the diary questionnaire. Most of the sources grouped there were broken out separately on the quarterly questionnaire, and greater detail was specified in some cases. An attempt was made to include all cash receipts over the calendar year, and specific questions were asked about tax refunds, lump-sum inheritances, sale of personal belongings, and cash insurance settlements. Thus, the concept of income is more comprehensive than that used on the Diary Survey. In addition, some information was obtained on in-kind income. A set of questions on food stamps was included in both years of the survey, permitting the calculation of the bonus value of food stamps, and families were asked the value of food grown at home, food provided through public or private programs, and free meals provided at work.

General Limitations of the Consumer Expenditure Survey

Although the 1972-73 Consumer Expenditure Survey is clearly a very comprehensive source of data on consumer expenditures, savings, and income, it not without certain limitations. Not least of these limitations is the fact that neither component survey exhausts the full set of expenditures. Therefore, a complete and consistent budget is not available directly from the data. It will be necessary to combine the results of the two surveys in order to develop the new expenditure weights for the Consumer Price Index. Opportunities exist for linking the two surveys, making use of the socioeconomic characteristics on each survey, the global food expenditures on the Quarterly



SOURCE: Michael D. Carlson, "The 1972-73 Consumer Expenditure Survey" Monthly Labor Review (December 1974), p. 19.

Figure 2. A Sample Page from the Quarterly Survey

Survey, and the overlapping items on the two surveys such as clothing and small appliances. 10/

Associated with any survey is the problem of response errors and sampling variability. It is still too early to ascertain the effects on the reliability of the results, as BLS is just beginning to analyze the responses and their variances. However, every effort was made in the field and in the coding to obtain as accurate responses as possible. Respondents were encouraged to consult records; interviewers provided detailed instructions on completing the diary and carefully reviewed each weekly diary; reminder checklists were provided with each diary; questions were carefully worded and timed.

Another potential problem with the results from the CEX is the coincidence of the second-year Diary and Quarterly Surveys with a period of rapid changes in the price structure, as world crop failures and the energy crisis led to rapidly rising food and energy prices. 11/ Moreover, the oil embargo in the winter of 1973-74 resulted in rationed fuel oil and lengthy lines for gasoline at service stations. 12/ These events could have resulted in a "disequilibrium" market basket of commodities observed in the survey results, as households had not yet fully adjusted to the new price structure or could not purchase the desired amount of fuel oil or gasoline at the prevailing prices. However, it is still too soon to ascertain whether market conditions were severe enough to have this impact or whether the 2 1/2-year survey period was long enough to insulate the survey results from their influence.

Some difficulties could be encountered in interpreting the results of the Diary Survey, as the annual income collected refers to different periods depending on the date of the interview. Thus, for the first-year Diary, the extremes of the income period ranged from (roughly) July 1, 1971-June 30, 1972, to July 1, 1972-June 30, 1973. No adjustment is made for these different reporting periods in the published results. Moreover, incomes on the Diary Survey may be less accurately reported because of their more aggregate nature and because the interview did not necessarily coincide with filing of the annual personal income tax return. 13/

## II. USES OF THE 1972-73 CONSUMER EXPENDITURE SURVEY

The primary purpose for undertaking the 1972-73 Consumer Expenditure Survey was the revision of the expenditure weights for the Consumer Price Index (CPI). This index, compiled by the BLS, is the only comprehensive monthly index of the rate of price increases. Each month the CPI indicates the change in prices of a given market basket of goods and services, priced in various retail outlets across the country. Although the index weights relate only to urban wage and clerical workers, it is frequently used as a general indicator of inflation in the economy. The "market basket" currently used for computing the CPI is based on the expenditure patterns of urban wage and clerical workers revealed in the 1960-61 Survey of Consumer Expenditures. As a result of shifts in buying patterns over the intervening period, because of the introduction of new products, quality changes in existing products, fashion changes, and shifts in the price structure, this market basket is

now outdated. 14/ The 1972-73 CEX will indicate those items currently bought by American consumers and their importance in the budget (the expenditure weights) to permit the construction of a more relevant market basket for the CPI. The revised CPI based on this new market basket will first be published in April 1977. In addition, the weights for a CPI relating to all urban workers will be developed from that survey.

A second important use of the new CEX will be the revision, by the Internal Revenue Service, of the standard table of sales tax allowance used by taxpayers when completing their personal income tax returns. Since the new CEX collected considerably more accurate information on the amount of sales tax paid than the previous survey, by specifically isolating that amount for each purchase, the revised sales tax table should reflect more realistically the total sales tax paid by consumers in each income class.

Two other BLS uses of the earlier CEX, the family budgets and the equivalence scales, will undoubtedly be reestimated with the new CEX data and revised accordingly. The BLS family budgets estimate the coast of the cost of achieving a lower, intermediate, and higher level of living for a typical urban family of four and the cost of living for a retired couple. 15/ These budgets are based on standards of need for food and housing and on the expenditure patterns revealed in the earlier survey. A technique known as quantity-income-elasticity is used in developing the budgets from the expenditure data. Within the scope of the family budgets program, BLS developed equivalence scales for adjusting the four-person budget for other family sizes and types. These adjustments were estimated on the basis of their proportion of income spent on food by the various family sizes and types and the assumption that families spending the same proportion of income on food are equally well off ("equivalent").

The data collected in the new CEX also provide a wealth of information for market researchers and other social researchers. Among the important issues which can be studied with the data is an assessment of the impact of various government policies, such as a gasoline tax. To analyze the distributional impact of such a proposal, it is necessary to know the amount spent on gasoline by families at different income levels. Such information is available directly from the new CEX, and will be much more relevant for the current situation than the outdated results from the 1960-61 survey.

Of primary concern for this study is the relevance and usefulness of the CEX data for developing, or at least for analyzing, alternative measures of poverty. As discussed extensively in Chapter II of the report, the issues concern the development of an absolute or relative measure of needs, including whether the needs standard should be adjusted for regional, climatic, metropolitan, urban, suburban, and rural differences and for family size and head of household differences. Additional conceptual issues relate to the appropriate measure of income, whether it should include the value of various liquid assets and in-kind transfer benefits such as food stamps or exclude taxes, and over what time period it should be measured. Further, the question was raised as to whether the poverty measure, once developed, should be updated with a price index relating specifically to poor persons.

In many respects, the 1972-73 Consumer Expenditure Survey seems an ideal data source for an empirical examination of these issues. However, as shown in the following discussion, that use is virtually impossible because the sample is too small at the low-income level to permit reliable estimates for such a detailed analysis.

As described in Section I, the expenditure information collected and coded is detailed enough to permit both a determination of the budget composition by broad expenditure categories, such as food, clothing, shelter, and transportation, and also the precise components of those categories, such as powdered milk, hamburger, tuna fish, steak, and caviar. However, the general problem of combining the results from the two component surveys into consistent expenditure patterns by income class remains a limitation.

On the income side, the CEX obtained information that would permit the construction of various concepts of income, although the period of measurement is fixed at one year. Included are certain food-related in-kind benefits, taxes, work-related expenses, and changes in different kinds of assets and liabilities. One serious drawback is that these refinements are available only on the Quarterly Survey, except for food stamp bonus value on the second-year Diary Survey. The food-related in-kind income would perhaps be more useful on the Diary Survey where these sources and amounts could be related to the detailed food expenditures. However, BLS staff indicate that many of these items, particularly the detailed assets and liabilities, may not be published separately 16/ because these items may not be reliable enough even for the full sample. Data on detailed asset-liability changes may be subject to large response errors.

To perform the desired investigation of variations in the cost of living at the poverty level would require a simultaneous stratification of the sample by income class, family size, family type, geographic region, and metropolitan-nonmetropolitan-rural location. Although the BLS staff are just beginning to analyze the statistical reliability of the information collected, it is clear that the sample size of the 1972-73 Consumer Expenditure Survey, about 20,000 households for each component, is not large enough to support such a fine stratification. The problem stems from the fact that estimates obtained from any sample are subject to sampling variability; i.e., variation resulting from the fact that a sample, rather than the entire population, was surveyed. Generally, estimates from a smaller sample are subject to wider (relative) variability, 17/ with the result that those estimates are less likely to be representative of the values for the population. In other words, the estimates based on a smaller sample are less reliable, statistically.

Based on a rough guideline developed by BLS for judging the statistical reliability of these expenditures estimates, it is possible to demonstrate the limits imposed on the analyses of systematic variation in the poverty threshold by the sample size of the CEX. For tabulation purposes, the BLS will flag data for tables containing fewer than 100 sample observations, fewer than 70 sample observations per table column, or fewer than 5 samples observations for a table cell; i.e., expenditure item. Detailed cross-tabulations

of data can exceed these requirements; the flagging procedure warns users that the variance around the expenditure means may be large. 18/ For some infrequently occurring expenditures or characteristics, such as the detailed asset information, a larger number of observations will be required for each family classification to yield reliable results.

Table 1 presents counts of families from the first-year Diary sample of about 11,000 families for which crossclassification by family size and income class yields fewer than 70 observations. For all except two-person families, at least one income class falls below the minimum of 70 families When the second-year Diary results are available and pooled with the first-year Diary, thus roughly doubling the sample size, the count of families in

Table 1. Number of Families in First-Year Diary Sample by Family Size and Income for Classes Smaller than 70
(Preliminary)

| Family Size/Income | Number of Families |
|---|---|
| One Person | |
| $1,500-1,999 | 60 |
| 2,000-2,499 | 15* |
| 2,500+ | 15* |
| Three Persons | |
| Under $2,000 | 63 |
| $2,000-2,999 | 43 |
| 3,000-3,999 | 62 |
| Four Persons | |
| Under $2,000 | 39 |
| $2,000-2,999 | 19* |
| 3,000-3,999 | 44 |
| 4,000-4,999 | 38 |
| 5,000-5,999 | 43 |
| 6,000-6,999 | 53 |
| Five Persons | |
| Under $2,000 | 19* |
| $2,000-2,999 | 8* |
| 3,000-3,999 | 21* |
| 4,000-4,999 | 26* |
| 5,000-5,999 | 35 |
| 6,000-6,999 | 37 |
| 7,000-7,999 | 37 |
| Six or More Persons | |
| Under $2,000 | 10* |
| $2,000-2,999 | 21* |
| 3,000-3,999 | 34* |
| 4,000-4,999 | 27* |
| 5,000-5,999 | 46 |
| 6,000-6,999 | 50 |
| 7,000-7,999 | 36 |

SOURCE: Special tabulation by the Bureau of Labor Statistics from the first-year Diary sample of the 1972-73 Consumer Expenditure Survey

*Cell size likely to be smaller than 70 families for the pooled diary subsamples.

these cells will increase permitting more of these arrays to be used with confidence. Eleven family size-income class cells possibly remain too small. Further stratification by geographic region and location clearly would be impossible. Collapsing the income categories to a poor-nonpoor breakdown (based on the current measure of the poverty threshold) does not completely solve the problem, but is a help. The first-year Diary sample contains only 1,534 poor families, and as shown in Table 2, there are too few families with six members. Pooling the two years of data, however, would likely provide enough cases for each family-size classification, but still would not warrant a further breakdown by geographic region and/or location for each of those classifications.

Without the detailed analysis of the sampling variability of the expenditure estimates (i.e., their standard errors) from the current CEX, it is impossible to derive the actual sample size which would be required to permit an analysis of expenditure patterns for the desired degree of stratification. However, using the guideline of a minimum of 70 families for each cross-classification of families, it is possible to develop very crudely a rough estimate of minimum required size. Stratification by nine geographic regions, three locations (metropolitan, nonmetropolitan urban, and rural), six family sizes, and two family types (male or female head) would require a sample of (9x3x6x2) x70=22,680 poor families. This represents the barest minimum, since each family surveyed would have the precise combination of desired stratifying characteristics. In fact, a much larger sample will be required since it is usually not possible to draw a sample with such precision. It is impossible to stratify the sampling frame that finely. If such an analysis is desired for all families by income class, rather than just currently defined poor households, the sample size would be further increased by a factor at least equal to the number of income class; in other words, a sample well over a minimum of 200,000. It should be noted that the recently completed CEX and Diary surveys leave a sample size of slightly over 20,000 families each, and cost in excess of $8 million to collect the data.

Table 2. Number of Families Below the Poverty Threshold In First-Year Diary Sample, by Family Size (Preliminary)

| Family Size | Number of Poor Families |
|---|---|
| All families | 1,534 |
| One person | 718 |
| Two persons | 339 |
| Three persons | 126 |
| Four persons | 116 |
| Five persons | 80 |
| Six persons | 45 |
| Seven (or more) persons | 110 |

SOURCE: Special tabulations by the Bureau of Labor Statistics from the first-year Diary sample of the 1972-73 Consumer Expenditure Survey.

## III. PRELIMINARY RESULTS FROM THE 1972-73 CONSUMER EXPENDITURE SURVEY

Although originally BLS had not scheduled any publication of the survey results until mid-1976 when the processing of all the data and the analysis of their statistical reliability had been completed, considerable public interest in this information prompted release of preliminary results in April 1975. These results were for selected expenditures on the first year Diary Survey. A subsequent release in May of 1975 (one is also planned for release in September, 1975) 19/ provided further detail and cross-tabulation of these results. On the basis of these preliminary results, it is possible to examine the pattern of expenditures for certain items by several of the characteristics of interest to this poverty study. Two expenditure categories were selected, all food and all energy, excluding gasoline. Both categories may be broadly classified as necessities 20/ and are, therefore, of interest in a study of poverty standards. Food expenditures have traditionally been used in computing poverty standards; energy expenditures in the home provide an indication of the magnitude of regional (climatic) variability in one expenditure component. It should be kept in mind that these results reported for the 1972-73 CEX are preliminary, based solely on the first-year Diary Survey. Data from the two survey years would be more reliable and may show somewhat different results.

Broad comparisons are initially made with the food expenditure results of the earlier survey in 1960-61 in Table 3, but income incompatibility for the two surveys (in the published results) makes a detailed comparison by income class difficult. 21/ Table 3 displays the percent of money income (before taxes) spent on all food purchases (food at home and food away from home) by family size for the 1960-61 Survey of Consumer Expenditures and for the 1972-73 Consumer Expenditure Survey. Overall, food purchases as a percent of income have fallen

Table 3. Food Expenditures as a Percentage of Income by Family Size, for 1960-61 Survey of Consumer Expenditures and First-Year Diary of 1972-73 Consumer Expenditure Survey

| Family Size | Food Expenditures as Percentage of Before Tax Money Income | | Energy Expenditures a/ as Percentage of Income, 1972-73 CEX |
|---|---|---|---|
| | 1960-61 CEX | 1972-73 CEX | |
| All Families | 19.8% | 17.4% | 3.5% |
| One person | 19.1 | 16.7 | 3.8 |
| Two persons | 17.7 | 15.3 | 3.5 |
| Three persons | 18.5 | 17.0 | 3.4 |
| Four persons | 19.8 | 17.4 | 3.2 |
| Five persons | 21.6 | 18.6 | 3.6 |
| Six or more persons | 25.5 | 22.1 | 3.9 |

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditures and Income, BLS Report No. 237-93, February 1965.
U.S. Department of Labor, Bureau of Labor Statistics, press release of April 16, 1975.

a/ All energy except gasoline.

from 20 percent to 17 percent over the period. 22/ In both surveys food expenditures as a percentage of income fall between one- and two-person families 23/ and then rise steadily as family size increases beyond two. The percentage of income spent on all energy, excluding gasoline, shown only for the 1972-73 results, exhibits a much more stable relationship across family size.

Since poverty status is not one of the limited number of characteristics included in these preliminary results, expenditure differences of poor and nonpoor families (using the current poverty definition) cannot be analyzed directly. It is possible, however, to study the expenditures of families with characteristics frequently associated with poverty. Table 4 compares the percentage of income spent on food and on all energy except gasoline in 1972-73 by all families with elderly members, single-parent families with at least one child (primarily female-headed families), black families, and families in which the head has an elementary school education or only one to three years of high school. Each of these selected demographic groups that experience a higher incidence of poverty than the general population spends a larger percentage of their income on these items than do all families. Many confounding factors, however, prevent strong conclusions about the expenditure patterns of these subgroups of the poor. Blacks are geographically more concentrated in the South where food and energy expenditures tend to be lower. Single-parent families tend to be larger and, therefore, to have higher expenditures. Elderly families, on the other hand, tend to be smaller, but their greater prevalence of home ownership may be causing their apparently disproportionately higher energy expenditures. The high food expenditures of the elderly may be a result of their greater use of convenience foods and their tendency to eat

Table 4. Food Expenditures and Energy Expenditures as Percentage of Income, by Selected Demographic Characteristics, 1972-73

| Family Characteristics | Food | Energy a/ |
|---|---|---|
| All Families | 17.4% | 3.5% |
| Elderly head (age 65 or older) | 21.6 | 6.2 |
| Single-parent families with at least one child | 26.1 | 5.6 |
| Black head | 20.2 | 4.0 |
| Head attained 1-8 years of school | 23.1 | 5.4 |
| Head attained 1-3 years of high school | 19.5 | 4.3 |

SOURCE: U.S. Department of Labor Statistics, press release of May 15, 1975, Tables 3, 8, 9, 10.

a/ All energy except gasoline.

out more frequently. A closer approximation to poverty status is attained by a cross-classification by income and family size, described next. Subsequently, expenditures are examined by several locational characteristics of interest—geographic region, urban-rural location, and inside-outside SMSA—each classified in turn with income.

The breakdown by income class and by family size of food expenditures as a percentage of income is reported in Table 5 for the first-year Diary results of the 1972-73 CEX. This percentage falls steadily as income rises, from almost 50 percent for households with income under $3,000 to less than 10 percent for households with income $25,000 and over. As family size increases, a higher percentage of income is spent on food, and over each family size that percentage generally declines as income rises. One problem with these results is immediately apparent: some low-income households are spending a very high proportion of their income on food, over 100 percent in two cases. Two reasons can be offered for this apparently anomalous situation. First, low-income households may be consuming out of assets because their income has temporarily or recently dropped to this low level. Second, the relatively high food expenditures are also undoubtedly a reflection of the recent rapid growth in the food stamp program. As a result, food purchases made possible by this transfer program are included in expenditures, but the bonus value of those food stamps is not included in income. To the extent that participating families spend a larger amount on food than they would have without the food stamps, this percentage of income spent on food is not comparable to the results obtained from earlier surveys.

Table 5. Food Expenditures as a Percentage of Income by Family Size and Income, 1972-73

| Income | Number of Persons in Family | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6+ | |
| All Families | 16.7% | 15.3% | 17.0% | 17.4% | 18.6% | 22.1% | 17.4% |
| Under $3,000 | 35.8 | 53.5 | 73.8 | 96.2* | 130.4* | 108.2* | 47.6 |
| 3,000-3,999 | 21.7 | 33.8 | 40.3* | 40.6* | 45.4* | 51.0* | 31.8 |
| 4,000-4,999 | 16.1 | 27.3 | 30.2 | 38.8* | 38.3* | 41.4* | 25.7 |
| 5,000-5,999 | 16.8 | 20.4 | 25.1 | 30.3* | 30.6* | 40.1* | 23.4 |
| 6,000-6,999 | 12.6 | 20.3 | 23.1 | 29.0* | 30.1* | 37.9* | 22.3 |
| 7,000-7,999 | 12.6 | 18.0 | 20.7 | 24.5 | 26.1* | 32.9* | 20.0 |
| 8,000-9,999 | 11.5 | 15.2 | 18.6 | 20.6 | 24.4 | 26.5 | 18.0 |
| 10,000-11,999 | 12.0 | 13.3 | 17.0 | 18.6 | 22.5 | 22.2 | 16.9 |
| 12,000-14,999 | 9.6 | 12.0 | 14.5 | 16.5 | 17.7 | 21.3 | 15.0 |
| 15,000-19,999 | 10.0* | 10.2 | 12.4 | 14.5 | 15.1 | 18.5 | 13.3 |
| 20,000-24,999 | 8.1* | 8.8 | 10.4 | 12.0 | 13.9 | 16.3 | 11.8 |
| 25,000+ | 5.3* | 6.0 | 8.2 | 8.2 | 9.5 | 10.1 | 8.0 |

SOURCE: Calculated from data in the Bureau of Labor Statistics Report 448-1. Consumer Expenditure Survey Series: Diary data 1972.

*Estimate based on fewer than 70 observations.

The geographic variation in food expenditures and energy expenditures, overall and by income class, is illustrated in Table 6. Families in the West spend the smallest percentage on all food items, 16 percent, followed by the North Central region and the South; 17 percent. The Northeast stands apart with over 19 percent of income spent on food. This regional pattern is not entirely consistent across the income distribution, as the relative ranking of the regions changes within some income classes. Within each region, the percentage of income spent on food falls as income rises, but not always steadily. The energy expenditures, although a much smaller percentage of income, exhibit a similar regional pattern, which tends to strengthen the regional differences observed in food expenditures: families in the Northeast spend a larger percentage of their income on energy in the home than families in the West, 4.0 percent compared to 2.6 percent. The regional pattern continues generally across the income distribution, and the percent generally falls as income rises. One problem with interpreting these results across income classes, however, is the inclusion of energy utilities in rent for some renters. Since the energy expenditures are averaged across all families, the averages will be affected by proportion of families in each income class not paying for their energy utilities directly. Families in the lower income classes are more likely to be renters and, therefore, average energy expenditures are more likely to have this downward bias for the lower income classes.

Table 6. Food Expenditures and Energy Expenditures as Percentage of Income, by Geographic Region and Income, 1972-73

| | Northeast | | North Central | | South | | West | | U.S. | |
|---|---|---|---|---|---|---|---|---|---|---|
| Income | Food | Energy a/ | Food | Energy a/ | Food | Energy a/ | Food | Energy a/ | Food | Energy a/ |
| All families | 19.4% | 4.0% | 16.8% | 3.8% | 17.3% | 3.5% | 16.1% | 2.6% | 17.4% | 3.5% |
| Under $3,000 | 55.8 | 17.3 | 42.0 | 14.9 | 47.5 | 12.5 | 46.0 | 10.0 | 47.6 | 13.7 |
| $3,000-3,999 | 36.9 | 6.3 | 29.7 | 8.3 | 32.6 | 7.0 | 28.1 | 5.1 | 31.8 | 6.9 |
| 4,000-4,999 | 26.5 | 8.9 | 23.7 | 6.2 | 26.8 | 6.0 | 25.6 | 6.2 | 25.7 | 6.6 |
| 5,000-5,999 | 22.0 | 4.6 | 24.7 | 6.3 | 23.9 | 5.0 | 22.1 | 4.2 | 23.4 | 5.2 |
| 6,000-6,999 | 21.8 | 5.7 | 21.0 | 5.7 | 22.9 | 4.3 | 23.7 | 3.9 | 22.3 | 4.9 |
| 7,000-7,999 | 21.0 | 3.4 | 20.0 | 5.6 | 20.4 | 3.3 | 18.0 | 2.9 | 20.0 | 3.8 |
| 8,000-8,999 | 20.8 | 4.4 | 16.2 | 4.2 | 17.1 | 3.8 | 18.2 | 3.8 | 18.0 | 4.1 |
| 10,000-11,999 | 18.4 | 4.2 | 16.5 | 4.0 | 15.9 | 3.0 | 17.3 | 2.7 | 16.9 | 3.5 |
| 12,000-14,999 | 16.4 | 3.4 | 15.2 | 3.1 | 13.6 | 2.7 | 14.9 | 3.0 | 15.0 | 2.8 |
| 15,000-19,999 | 14.4 | 3.0 | 13.4 | 2.5 | 12.9 | 2.3 | 12.3 | 1.9 | 13.3 | 2.5 |
| 20,000-24,999 | 12.1 | 2.3 | 12.2 | 2.2 | 10.0 | 2.0 | 13.1 | 2.0 | 11.8 | 2.1 |
| 25,000+ | 9.9 | 1.4 | 8.2 | 1.6 | 6.4 | 1.2 | 7.4 | 1.1 | 8.0 | 1.3 |

SOURCE: Calculated from data in the Bureau of Labor Statistics Report 448-1. Consumer Expenditure Survey Series: Diary data 1972.

a/ All energy expenditures except gasoline.

Table 7 shows the differences for urban and rural families and for metropolitan and nonmetropolitan families by income class. On the average, rural families spend a larger percentage of their income on food than urban families, although this result is not true for all income classes. A similar result is observed for the inside-outside SMSA breakdown, with families living outside of an SMSA spending a higher percentage on food. Rural families and families living outside an SMSA also spend a higher percentage of their income on energy in the home, undoubtedly a partial result of the greater prevalence of single-family homes in those areas. This differential is more consistent across the income distribution and is wider at the low end of the distribution.

Table 7. Food Expenditures and Energy Expenditures as Percentage of Income, by Urban-Rural Location and Income and by Inside-Outside SMSA Location and Income, 1972-73

| | U.S. | | Urban | | Rural | | Inside SMSA | | Outside SMSA | |
|---|---|---|---|---|---|---|---|---|---|---|
| Income | Food | Energy a/ | Food | Energy a/ | Food | Energy a/ | Food | Energy a/ | Food | Energy a/ |
| All families | 17.4% | 3.5% | 17.1% | 3.3% | 18.6% | 4.7% | 17.1% | 3.2% | 18.0% | 4.4% |
| Under $3,000 | 47.6 | 13.7 | 46.2 | 11.8 | 52.2 | 20.2 | 48.5 | 12.0 | 46.1 | 16.2 |
| $3,000-3,999 | 31.8 | 6.9 | 32.0 | 6.0 | 31.2 | 9.9 | 34.6 | 6.4 | 27.4 | 7.6 |
| 4,000-4,999 | 25.7 | 6.6 | 26.2 | 6.8 | 23.5 | 5.9 | 27.0 | 6.9 | 23.4 | 6.2 |
| 5,000-5,999 | 23.4 | 5.2 | 23.8 | 5.1 | 22.0 | 5.6 | 24.6 | 4.9 | 21.4 | 5.7 |
| 6,000-6,999 | 22.3 | 4.9 | 21.8 | 4.4 | 24.3 | 6.7 | 22.2 | 4.8 | 22.4 | 5.2 |
| 7,000-7,999 | 20.0 | 3.8 | 20.0 | 3.6 | 20.2 | 4.6 | 20.0 | 3.4 | 20.0 | 4.6 |
| 8,000-9,999 | 18.0 | 4.1 | 18.1 | 4.0 | 17.2 | 4.2 | 18.5 | 4.0 | 16.8 | 4.3 |
| 10,000-11,999 | 16.9 | 3.5 | 17.0 | 3.4 | 16.2 | 4.3 | 17.2 | 3.3 | 16.2 | 4.1 |
| 12,000-14,999 | 15.0 | 2.8 | 15.0 | 2.8 | 14.8 | 3.0 | 15.1 | 2.8 | 14.5 | 3.0 |
| 15,000-19,999 | 13.3 | 2.5 | 13.4 | 2.4 | 12.4 | 2.8 | 13.5 | 2.3 | 12.6 | 3.0 |
| 20,000-24,999 | 11.8 | 2.1 | 12.0 | 2.3 | 10.1 | 1.2 | 12.0 | 2.3 | 10.6 | 1.5 |
| 25,000+ | 8.0 | 1.3 | 8.1 | 1.3 | 6.5* | 1.2* | 8.1 | 1.3 | 7.5* | 1.3* |

SOURCE: Calculated from data in the Bureau of Labor Statistics Report 448-1. Consumer Expenditure Survey Series: Diary data 1972.

NOTE: The urban-rural breakdown and the inside-outside SMSA breakdown each exhaust the entire population.

*Estimate based on fewer than 70 observations.

a/ All energy expenditures except gasoline.

The breakdown by geographic region and inside-outside SMSA is shown in Table 8 for percentage of income spent on food and on energy in the home. The national result that families living outside an SMSA spend a higher percentage of income on food is not evident in the Northeast and North Central regions. In all regions families living outside an SMSA spend a higher percentage of income on energy than families living inside an SMSA. Further interpretation of these results is complicated by the inability to control simultaneously for income in each of these areas.

Table 8. Food Expenditures and Energy Expenditures as Percentage of Income by Inside-Outside SMSA Location and Geographic Region, 1972-73

| Region and Location | Expenditures as Percentage of Income | |
|---|---|---|
| | Food | Energy |
| United States | 17.4% | 3.5% |
| Inside SMSA | 17.1 | 3.2 |
| Outside SMSA | 18.0 | 4.4 |
| Northeast | 19.4% | 4.0% |
| Inside SMSA | 19.5 | 3.7 |
| Outside SMSA | 18.6 | 5.3 |
| North Central | 16.8% | 3.8% |
| Inside SMSA | 17.1 | 3.5 |
| Outside SMSA | 16.1 | 4.6 |
| South | 17.3% | 3.5% |
| Inside SMSA | 16.2 | 3.1 |
| Outside SMSA | 19.5 | 4.1 |
| West | 15.8% | 2.6% |
| Inside SMSA | 15.5 | 2.4 |
| Outside SMSA | 17.6 | 3.6 |

SOURCE: Calculated from data in the Bureau of Labor Statistics Report 448-1. Consumer Expenditure Survey Series: Diary data 1972.

## FOOTNOTES TO TECHNICAL PAPER VIII

1. Michael D. Carlson, "The 1972-73 Consumer Expenditure Survey," Monthly Labor Review (December 1974), pp. 16-23.

2. Bureau of Labor Statistics news release of April 16, 1975.

3. Other national surveys were conducted in 1901, 1917-19, 1933-36, 1941-42, 1950, and 1960-61. See Carlson, p. 20, for a more detailed discussion of the history of these surveys.

4. A PSU is an SMSA, a county, or a group of counties.

5. Primary family refers to the basic family unit living in the dwelling whose head is also the head of the household.

6. The value of the food stamps minus the amount paid for them by the participant.

7. Carlson, p. 18.

8. All expenses but those for trips were actually recorded on the diary questionnaire.

9. Carlson, p. 18.

10. Although the diary questionnaire asked respondents to record all expenditures, many are not usable as control totals in a linking of the two surveys because the time period was not indicated, for example, rent, utility bills, and insurance payments.

11. Food prices increased by 3.0 percent between 1970 and 1971, 4.3 percent between 1971 and 1972, but 14.5 percent between 1972 and 1973 and 14.4 percent between 1973 and 1974.

12. The effects of the oil embargo, declared in mid-October 1973, were felt in the limited States by December 1973, and in January, February, and March of 1974 fuel oil was rationed and the gasoline shortage caused various rationing schemes for gasoline and lengthy lines at gas pumps. See John F. Early, "Effect of the Energy Crisis on Employment," Monthly Labor Review (August 1974), p. 14.

13. It may be possible to check the differential reporting accuracy of incomes with the global estimate of annual income obtained in the second quarterly interview of the Quarterly Survey.

14. Some limited attempt has been made by BLS to introduce new products and phase out obsolete commodities, but it has not been possible to revise the expenditure weights.

15. See Technical Paper IV for an extended discussion of these family budgets.

16. Overall annual net change in assets and liabilities will be published.

17. That is, relative to the estimate. The measure of this sampling variability is the standard error; the true mean lies in the interval of ± one standard deviation around the estimated mean with 68 percent confidence, and within ± two standard deviations with 95 percent confidence. A further determinant of the sampling variability relates to the frequency of occurrence and the variability in the characteristic being studied.

18. Expenditure estimates based on so few observations would be usable but not very meaningful: their standard errors are about one-half of the estimate of the mean, thus producing an extremely wide confidence interval at the 95 percent level.

19. Preliminary results of this release were made available to the Poverty Committee. The release was published in November 1975 as BLS Report 448-1, Consumer Expenditure Survey Series: Diary Data 1972, "Selected Weekly Expenditures Cross-Classified by Family Characteristics."

20. Although obviously not all expenditures falling in these categories are necessarily a "necessity," e.g., potato chips, soft drinks, electricity used for air conditioning.

21. The reported income classes for the 1960-61 survey results are for money income after taxes in 1959-60; the reported income classes for the 1972-73 survey results are for money income before taxes in 1971-72.

22. Note that because of the growth in the food stamp program, these percentages are not entirely comparable. This point is discussed further below.

23. One reason is that unrelated individuals eat out more frequently. The percentage of income spent on food at home rises steadily from one-person families.

To obtain copies of the report, *The Measure of Poverty*, or additional copies of this or any of the other Technical Papers, please write to:

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